

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (Currently Amended) ~~An thermal~~ imaging system comprising:

a thermal imaging based system comprising a focal plane array (FPA) having a plurality of pixels sensitive to heat radiation;

a lens adapted to focus heat radiation from a scene in front of the lens onto the FPA behind the lens;

a shutter located between the lens and the scene in front of the lens,

the shutter having a closed state and an open state wherein the closed state prevents the heat radiation from the scene from entering the system, and allows internal radiant flux of the imaging system to reach detectors of the FPA as a reference image signal and the open state allows an open state image signal that includes the heat radiation from the scene and the internal radiant flux of the system to enter the system and reach detectors of the FPA; and

a signal processing module operatively coupled to the FPA, and adapted to correct the open state image signal based on the reference image signal.

Claim 2. (Original) The system of claim 1 further comprising:

a shutter controller operatively coupled to the shutter, and adapted to command the shutter to its opened and closed states.

Claim 3. (Original) The system of claim 2 further comprising:

a system controller communicatively coupled to the shutter controller and the signal processing module, and adapted to control operation of the imaging system.

Claim 4. (Original) The system of claim 3 where the system controller is communicatively coupled to a network thereby enabling the imaging system to communicate with other systems also communicatively coupled to the network.

Claims 5 - 6. (Canceled)

Claim 7. (Original) The system of claim 1 further wherein the shutter has a lens side surface that is located within five millimeters of the front of the lens.

Claim 8. (Previously Presented) The system of claim 1 wherein for any one session of imaging system operation, each of a plurality of open state image signals are corrected for pixel-to-pixel non-uniformities and offset based on the open and closed state image signals.

Claim 9. (Original) The system of claim 1 wherein the closed state image signal is periodically generated to account for changes in the imaging system.

Claim 10. (Currently Amended) A method for thermally imaging a scene, where the method is carried out by a thermal imaging based system configured with a front lens mounted shutter, lens, and focal plane array (FPA), the shutter being disposed between the lens and the scene, the method comprising:

- closing the front lens mounted shutter so that external scene heat radiation is blocked from entering the imaging system and being imaged through the lens onto the FPA;

- generating a closed state image signal that includes internal radiant flux of the imaging system;

- opening the front lens mounted shutter thereby allowing the imaging system to receive the external scene heat radiation through the lens onto the FPA;

- generating an open state image signal based on the received external scene heat radiation; and

correcting the open state image signal based on the closed state image signal.

Claim 11. (Previously Presented) The method of claim 10 wherein correcting the open state image signal includes compensating for pixel-to-pixel non-uniformities of the FPA.

Claim 12. (Previously Presented) The method of claim 10 wherein correcting the open state image signal includes compensating for offsets between the opened and closed states of the shutter.

Claim 13. (Previously Presented) The method of claim 10 wherein correcting the open state image signal includes compensating for pixel-to-pixel non-uniformities and offsets between the opened and closed states of the shutter.

Claim 14. (Canceled)

Claim 15. (Currently Amended) A method for manufacturing a thermal imaging system, the method comprising:

providing a lens and a thermal imaging detector array, the lens being adapted to focus heat radiating from a scene in front of the lens onto the detector array behind the lens; and

providing a shutter located ~~in front of~~ between the lens and the scene whereby the shutter, lens and detector array comprise ~~[[an]]~~ a thermal imaging based system, the shutter having a closed state that prevents heat radiating from the scene from entering the system and allows the detector array to generate a closed state image signal comprising internal radiant flux of the imaging system and an open state that allows the detector array to generate an open state image signal comprising the the heat radiating from the scene.

Claim 16. (Previously Presented) The method of claim 15 wherein the detector array comprises a plurality of pixels for detecting thermal scene radiation; the method further comprising:

operatively coupling a signal processing module to the detector array, the signal processing module adapted to correct open state image signals based on closed state image signals.

Claims 17 - 19. (Canceled)

Claim 20. (Original) The method of claim 15 further wherein the shutter has a lens side surface that is located within five millimeters of the front of the lens.

Claim 21. (Previously Presented) The method of claim 16 further comprising:

operatively coupling a shutter controller to the shutter, the shutter controller adapted to command the shutter to its opened and closed states.

Claim 22. (Currently Amended) The method of claim ~~[[17]]~~ 15 further comprising:

operatively coupling a system controller to the shutter controller and the processing module, the system controller adapted to control operation of the imaging system.